

Human and Natural Environment

The Department of Transportation, in identifying its strategic goal in the area of human and natural environment, has set as its goal to protect and enhance communities and the natural environment affected by transportation.

Ship Disposal

During FY 2002, ship disposal was among DOT's management challenges. MARAD is the U.S. Government's disposal agent for merchant-type vessels of 1,500 gross tons or more. It is mandated by Congress to dispose of all obsolete ships in the NDRF by October 2006.

Since 1994, environmental concerns and hazardous material regulatory obstacles have prevented the export of ships, which had until that time been a disposal option that maximized financial returns to the taxpayer. There was a time when scrapping ships did not cost the U.S. Government anything, and was, in fact, a source of revenue. However, the export option is suspended, and domestic scrappers are rarely willing to pay to take ships. Without a consistent funding stream for scrapping and limited options, MARAD has shown a great deal of ingenuity, both in containing the immediate threat and in negotiating new ways to remove the ships.

At the end of FY 2002, there were 133 obsolete vessels nationwide awaiting disposal. Twenty-seven of those are assessed as high-risk because of their deteriorated condition. The 27 high-risk vessels, in particular, present an environmental threat due to the potential for oil discharges. The threat includes both environmental damage and significant clean-up costs. MARAD did not receive FY 2002 funding for the disposal of obsolete vessels.

An aggressive program of maximizing FY 2001 funds and pursuing all feasible disposal options in FY 2002 has laid the foundation for cost-effective accelerated ship disposal through interagency initiatives and industry response to requests for innovative proposals.

Specific accomplishments in the removal of vessels from the NDRF in FY 2002 include:

- Six vessels were removed for disposal from the JRRF, which is part of the NDRF, including four FY 2001-funded scrapping contracts and two FY 1999 sales contracts. Four of the six vessels were completely dismantled, and two were in the process of being dismantled at the end of the fiscal year.
- Four vessels that were removed from the NDRF prior to FY 2002 were also completely dismantled during the year.
- One vessel was sunk as an artificial fish reef.
- A heavy-weather mooring contract was completed on Vessel WATTS (Mobile, Alabama).

Also, in FY 2002, MARAD began several initiatives to focus on cost-effective disposal alternatives to domestic scrapping for obsolete vessels in the NDRF. Two initiatives involve multi-agency workgroups exploring the establishment of responsible procedures that hopefully will lead to the export of ships for foreign recycling, and the development of



national best-management practices for preparing ships for use as artificial reefs.

MARAD issued a ship disposal Program Research and Development Announcement (PRDA) in *FedBizOps* in November 2001. The PRDA requested innovative engineering, technical production, and management approaches for disposal of vessels. As of September 30, 2002, 46 proposals had been received; 27 proposals had been evaluated; numerous proposals were under consideration for vessel export for recycling and for domestic scrapping; and one contract had been awarded for domestic scrapping of one vessel.

MARAD's Vessel Artificial Reefing Initiative was established in February 2002, in conjunction with the EPA and numerous other stakeholder agencies. Environmental best-management practices are being developed through contaminants class workgroups, and are expected to be completed in FY 2003. MARAD also requested a legislative change to allow the expenditure of Federal funds to be used to pay for some of the costs associated with preparing obsolete vessels for use as artificial reefs. Currently, states requesting the vessels bear the entire cost to prepare vessels for sinking as artificial reefs. MARAD further solicited interest, and is organizing Basel Convention countries, the IMO, and the ILO in an international program to ensure environmentally responsible and sustainable ship disposal.

On November 1, 2001, the JRRF Obsolete Vessels Fuel Oil Removal and Oil Spill Risk Mitigation Team received the Secretary's Team Award for its achievements.

Environment and the Marine Transportation System (MTS)

As maritime trade expands and increases the strain on the surface transportation system, so will the potential impacts that maritime transportation has on the environment. MARAD is mindful of increased environmental concerns caused by the use of the MTS, and considers monitoring those concerns an important part of the agency's stewardship. There are two particularly critical environmental impacts associated with the MTS: air emissions and energy consumption, and the introduction of aquatic nuisance species, particularly in ballast water.

Spotlight: South Atlantic Region
Oil Removal Activities in the JRRF

The JRRF has the majority of the NDRF vessels distributed among MARAD's three reserve fleets. Numerous obsolete vessels awaiting disposal, some at the fleet since the 1940's, have an assortment of petroleum products aboard. Anecdotal evidence would indicate that the personnel at JRRF manage to keep the river clean: osprey nest and fish among the ships, and local fishermen know it as one of the most rewarding fishing grounds in the area.

However, one of these obsolete NDRF vessels, the EXPORT CHALLENGER, leaked oil from its hull in the summer of 1998. What followed was an expensive oil-removal operation that ensured no other tanks would leak. A similar incident involving the ex-DONNER in August, 2000, raised concerns among MARAD, the USCG, and the Virginia Department of Environmental Quality about possible leaks occurring on other ships with similarly deteriorating hulls.

Thereafter, MARAD's South Atlantic Region (SAR) has investigated different approaches to removing petroleum products from vessels. Using organic resources and past experience, the SAR has gathered data, evaluated feasible removal solutions, estimated subsequent expenses, and reviewed vessel-oil-removal priorities to help formulate an agency-wide strategy.

Regardless of the method investigated, removal of petroleum products is a costly process, requiring an outlay of equipment, skilled labor, and technical oversight. Generally, ship scrapping is the preferred method, which would completely mitigate oil and other onboard environmental hazards. Expenses such as the transportation of the vessel to and from the fleet, replacing the oil with ballast for stability purposes, and accessing the tanks can be eliminated by utilizing ship scrapping rather than single oil-removal methods. Within the last year, the following ships have been removed from the JRRF.

Vessel	Date Entered	Date Left	Total Oil Removed (Long Tons)
EXPORT COMMERCE	27-Sep-84	10-Jun-98	223.4
AMERICAN VICTORY	19-Dec-47	08-Sep-99	264.6
SUFFOLK COUNTY	16-Dec-73	23-Nov-99	0.8
CAPE CHALMERS	11-Sep-84	16-Dec-99	1210.6
SUSTAIN	21-Oct-97	29-Dec-99	0
ATAKAPA	01-Oct-81	13-Apr-00	0
VEGA	28-Apr-94	28-Apr-00	173.8
EXPORT BUILDER	28-Nov-84	21-Sep-00	225.96
GUAM	08-Mar-00	14-Dec-00	0
ALAMOGORDO	21-Mar-95	10-Jan-01	21.3
WASHINGTON	13-Feb-78	26-Jan-01	489.6
ADVENTUROUS	27-Feb-96	31-Jan-01	4.47
SPIEGEL GROVE	17-Sep-90	12-Jun-01	27.4
EXPORT CHALLENGER	21-Dec-87	29-Aug-01	3.3
LYNCH	21-Oct-91	29-Aug-01	223.5
GEN ALEX M PATCH	26-May-70	23-Oct-01	1473.7
APL 57	19-Aug-91	30-Oct-01	0
WAYNE VICTORY	06-Nov-53	21-Nov-01	201.6
CRANDALL	11-Feb-76	30-Nov-01	0
CRILLEY	02-Sep-76	30-Nov-01	0
WOOD COUNTY	01-Apr-92	06-Jun-02	6.6
LORAIN COUNTY	31-Jan-73	13-Sep-02	0.3
TOTAL:			1682.2

Air Emissions and Clean Energy. There have been significant technological advances in low emissions and energy-efficient power for landside transportation applications, but little attention has been given to applying those advances to the marine sector. MARAD created the Marine Energy and Clean Air Initiative to ensure that technological advances will be seamlessly integrated with the national landside transportation system.

This cooperative program with industry, academia, and other government agencies works to improve marine energy efficiency and reduce marine-related air pollution. The broad objective of the program is to demonstrate higher efficiency marine power plants that can reduce exhaust emissions by up to 90 percent. Beginning in April 2002, the *Energy and Emissions Newsletter* was published by MARAD's NMREC, and is available on the MARAD website, <http://marad.dot.gov/nmrec/whatsnew/whatsnew.html>.

MARAD also facilitated a study of the feasibility of using the Hydrogen-on-Demand System aboard marine vessels through an agreement with private industry, which led to the start of a design phase for a prototype vessel.

Aquatic Nuisance Species. The introduction of aquatic nuisance species is becoming a significant impediment to the MTS. Because foreign ballast water discharged into U.S. harbors may contain exotic species and pathogens that threaten to damage important ecosystems and fisheries, vessels are prohibited from taking on and discharging ballast water in certain port areas, making cargo loading and unloading severely constrained. Other impediments include changes in vessel routings to avoid special areas of concern and mid-ocean ballast water exchanges.

MARAD has addressed this complex issue by developing the Federal Ballast Water Demonstration Project (FedBallast), which involves several Federal and private stakeholders that provide a seamless process to test and develop ballast water treatment systems. This dual-phased approach is designed to move technology testing from the lab to stationary ships and ultimately to commercially operating vessels.

RRF Environmental Program

MARAD has voluntarily instituted an aggressive and highly proactive environmental program for its RRF ships. Although "public vessel status" exempts MARAD ships from compliance with the Oil Pollution Act of 1990 and MARPOL requirements, which come from the International Convention for the Prevention of Pollution from Ships, MARAD continues to take environmental stewardship responsibly.

The primary exposure for both the RRF and NDRF vessels is a bunker-oil spill. Thus, the proactive containment booming policy requires hands-on boom training and a substantial provision of boom footage at the three NDRF fleets, and booming whenever possible and practical during bunkering and internal bunker-transfer operations.

Shipbuilding and the Environment

MARAD also assures that its Title XI loan guarantee projects for building ships and improving shipyards are in compliance with applicable environmental requirements. In FY 2002, MARAD reviewed 15 Title XI applications for environmental compliance, two of which required comprehensive environmental oversight that is ongoing. MARAD continues to participate in the environmental evaluation of the Massachusetts Heavy Industry (MHI) shipyard in Quincy, Massachusetts. MARAD's Office of Environmental Activities provided assistance to the Port of Baltimore in evaluating the condition of an inactive-ship dismantling site.

Management and Industry Support

MARAD continued conducting its third round of environmental audits which began in FY 1999 and was completed in FY 2002. There were no deficiencies found at any of the MARAD facilities.

However, as a result of these reviews MARAD has dramatically increased facility compliance and environmental stewardship initiatives. In MARAD's western region where this waste is considered hazardous, the waste is disposed of according to State and local regulations with zero violations. In all fleet facilities, the amounts of toxic chemicals were below reporting thresholds. MARAD successfully completed several key environmental projects including aboveground and underground storage tank removal.

The MARAD-operated USMMA has dramatically increased its use of environmentally friendly landscaping in an effort to reduce runoff into the Long Island Sound. MARAD is actively reducing the use of selected hazardous substances at all facilities each year, so that by December 31, 2006, there will be an overall reduction of 50 percent. In FY 2002, MARAD implemented a pre-screening process that effectively reduced the amount of hazardous substances (primarily chemicals) at its facilities by 20 percent.

Environmental Outreach

During FY 2002, the South Atlantic Region was fully engaged in environmental outreach efforts within the community. SAR employees played a significant role in volunteer events that enhanced environmental quality in the local community. SAR actively promoted and supported the "Great American Cleanup in Norfolk" campaign sponsored by the Norfolk Environmental Commission. The SAR office participated in several activities including a Clean Commute Day, Clean the Bay Day, Earth Day, and a clothing recycling/re-use event. For these efforts, the Norfolk Environmental Commission selected SAR to receive a 2002 Environmental Action Award.